

**Commonwealth of Kentucky  
Division for Air Quality**

**PERMIT APPLICATION SUMMARY FORM**

Completed by: Sukhendu K. Majumdar

GENERAL INFORMATION:

Name:	Kentucky Hydrocarbons, Inc.
Address:	72 Maple Street Langley, KY 41645
Date application received:	2/26/2007
SIC Code/SIC description:	1321, Oil & Gas Extraction, Natural Gas Liquid
Source ID:	21-071-00140
Source A.I. #:	38048
Activity ID:	APE20070001
Permit:	V-03-026 R1

APPLICATION TYPE/PERMIT ACTIVITY:

<input type="checkbox"/> Initial issuance	<input type="checkbox"/> General permit
<input checked="" type="checkbox"/> Permit modification	<input type="checkbox"/> Conditional major
<input type="checkbox"/> Administrative	<input checked="" type="checkbox"/> Title V
<input type="checkbox"/> Minor	<input type="checkbox"/> Synthetic minor
<input checked="" type="checkbox"/> Significant	<input type="checkbox"/> Operating
<input type="checkbox"/> Permit renewal	<input checked="" type="checkbox"/> Construction/operating

COMPLIANCE SUMMARY:

<input type="checkbox"/> Source is out of compliance	<input checked="" type="checkbox"/> Compliance schedule included
<input type="checkbox"/> Compliance certification signed	

APPLICABLE REQUIREMENTS LIST:

<input type="checkbox"/> NSR	<input type="checkbox"/> NSPS	<input checked="" type="checkbox"/> SIP
<input type="checkbox"/> PSD	<input type="checkbox"/> NESHAPS	<input type="checkbox"/> Other
<input type="checkbox"/> Netted out of PSD/NSR	<input type="checkbox"/> Not major modification per 401 KAR 51:001, 1(116)(b)	

MISCELLANEOUS:

- ☐ Acid rain source
- ☐ Source subject to 112(r)
- ☐ Source applied for federally enforceable emissions cap
- ☐ Source provided terms for alternative operating scenarios
- ☐ Source subject to a MACT standard
- ☐ Source requested case-by-case 112(g) or (j) determination
- ☐ Application proposes new control technology
- ☒ Certified by responsible official
- ☒ Diagrams or drawings included
- ☐ Confidential business information (CBI) submitted in application
- ☐ Pollution Prevention Measures
- ☐ Area is non-attainment (list pollutants):

EMISSIONS SUMMARY:

Pollutant	2006 Emission Survey Actual (tpy)	Potential (tpy)
PM/PM <sub>10</sub>	0.35/0.35	1.46/1.46
SO <sub>2</sub>	0.02	0.12
NO <sub>x</sub>	5.5	102.7
CO	3.3	69.0
VOC	0.27	13.62
Single HAPs	0.02	< 9.0
Source wide HAPs	0.04	<22.5

**SOURCE DESCRIPTION:**

On February 26, 2007, the permittee applied to the Division for the construction/operation of a new natural gas liquid (NGL) plant at the existing Langley, Kentucky site. The new NGL plant will consist of the NGL extraction system and associated equipment. The NGL process will be used to segregate NGL components (i.e., propane, butane, pentane, and other residual components) from natural gas received at the facility. Equitable Production Company (Equitable), d.b.a. Kentucky Hydrocarbon, Inc., currently operates natural gas compression units that pressurize natural gas entering the facility via pipelines. The pressurized natural gas stream is liquefied and segregated into NGL components in an existing NGL extraction plant, which is owned and operated by MarkWest Hydrocarbons, Inc. (MarkWest).

Natural gas is piped to the Langley facility from wells in the Eastern Kentucky region. This natural gas stream can contain a variety of NGL components, including C1 – C5+ hydrocarbon compounds. The input natural gas stream is compressed to high pressure in the compression engines. The gas compression system consists of a turbo expander, a refrigerant compressor, five natural-gas fired Cooper-Bessemer compressors, and one electrically-driven compressor. The expander drives the centrifugal inlet gas compressor, which boosts the inlet gas from 68 psig to 86 psig prior to compression by the existing Cooper-Bessemer compressors. The final pressure of the gas stream is increased to approximately 530 psig in the five Cooper-Bessemer compressors. The higher suction pressure to the reciprocating compressors enables them to handle up to approximately 70 million standard cubic feet per day (scfd) of gas.

**Source Classification:**

Under the PSD and Title V program incorporated into Kentucky's State Implementation Plan (SIP), a single stationary source, defined in terms of a "building, structure, facility or installation" means all the pollutant emitting activities that:

- ▲ Belong to a single major industrial grouping;
- ▲ Are contiguous or adjacent; and
- ▲ Are under common control or ownership. [401 KAR 51:017, Section 1 (29) and (233) and 401 KAR 52:001, Section 1 (65)]

A stationary source is classified according to the primary activity at the location, which is determined by the principal product (or group of products) produced or distributed, or by the services it renders.

Equitable's natural gas compression facility and MarkWest's NGL extraction facility have the same two-digit SIC code, 1321 (Oil and Gas Extraction, Natural Gas Liquids). The Equitable and MarkWest facilities operate contiguously. Hence, the Equitable and MarkWest facilities are classified as a single source under both the PSD and Title V permitting programs.

The Division issued two separate Title V permits to Equitable and Markwest even though the Langley facility is single source to reflect different company names and control of process equipment. The Division stated that the two facilities will be individually responsible for compliance in their respective portions of the site unless there is a joint cause for the non-compliance. The combined emissions from both facilities are evaluated for PSD and Title V permit applicability purposes.

**EMISSIONS AND OPERATING CAPS DESCRIPTIONS:**

None

**OPERATIONAL FLEXIBILITY:**

None